

We claim:

1. A vehicle comprising:
a set of wheel assemblies;
a body mounted on said wheel assemblies;
a steering system mounted on said body and operatively connected to at least one of said wheel assemblies;
a module removably mounted on said body including a support structure and a power plant mounted on said support structure; and
means for transferring drive from said power plant to at least one of said wheel assemblies when said module is mounted on said body, including means for disconnecting said power plant from said drive transferring means.
2. A vehicle according to claim 1 wherein said module is mountable on the longitudinal centerline of said body.
3. A vehicle according to claim 1 wherein said module is mountable within said body, and said body includes an access opening through which said module may be inserted into and removed from said body.
4. A vehicle according to claim 1 wherein said power plant includes an engine and a transmission, and said drive transferring means includes means for coupling an output shaft of said transmission to an input shaft of said drive transferring means.
5. A vehicle according to claim 4 wherein said transmission is disposed beneath said engine, and including means for transferring drive from said engine to said transmission.
6. A vehicle according to claim 5 wherein said engine is a diesel engine and said transmission is automatic.

7. A vehicle according to claim 1 wherein said module is mountable on said body between a set of wheel assemblies.

8. A vehicle according to claim 1 wherein said body includes a closed power plant compartment having air intake and exhaust openings, and said module is mountable therein.

9. A vehicle according to claim 1 wherein said body includes a closeable opening through which a portion of said power plant may be accessed.

10. A vehicle according to claim 9 wherein said opening is disposed in a wheel well of said body.

11. A vehicle according to claim 1 wherein said body is of a monocoque construction.

12. A vehicle according to claim 1 including means supported on said body and cooperable with said support structure for guiding said module into a selected position on said body.

13. A vehicle according to claim 1 including means supported on said body and cooperable with said support structure for detachably securing said module in a selected position on said body.

14. A vehicle according to claim 11 wherein an access door is provided in a roof section of said body through which said module may be lifted and lowered in removing and inserting said module out of and into said body.

15. A vehicle according to claim 14 wherein said access door includes an air intake grille.

16. A vehicle according to claim 11 wherein said support structure of said module includes an intake grille which forms a section of said body when said module is mounted in said body.

17. A vehicle according to claim 11 wherein said body includes a closed compartment in which said module is mounted, said compartment includes an air intake and an exhaust outlet whereby air introduced through said intake is caused to flow through said compartment and be exhausted through said outlet.

18. A vehicle according to claim 17 including a fan disposed in said compartment for exhausting air therefrom.

19. A vehicle according to claim 11 wherein said body includes a closed compartment in which said module is mounted, said compartment includes walls spaced from said module having an air intake and an exhaust opening providing an air passageway from said intake, past said power plant and through said exhaust opening, and including a radiator in said air passageway.

20. A vehicle according to claim 19 including a fan disposed between said radiator and said exhaust.

21. A vehicle according to claim 20 wherein said air intake comprises a grille formed as a portion of said body, said radiator is supported on said support structure and said exhaust opening comprises a grille formed as a portion of said body.

22. A vehicle according to claim 21 including a fan supported on said support structure disposed between said radiator and said exhaust opening.

23. A vehicle according to claim 1 wherein said vehicle has a 4x4 wheel configuration and said module is mountable between the first and second wheel positions thereof.

24. A vehicle according to claim 1 wherein said vehicle has a 6x6 wheel configuration and said module is mounted between the first and second wheel positions thereof.

25. A vehicle according to claim 1 wherein said vehicle has an 8x8 wheel configuration and said module is mounted between first and second wheel positions thereof.

26. A vehicle according to claim 1 wherein said vehicle has an 8x8 wheel configuration and said module is mounted between second and third wheel positions thereof.

27. A vehicle according to claim 1 wherein said vehicle has a 10x10 wheel configuration and said module is mounted between second and third wheel positions thereof.

28. A module removably mountable on a vehicle having a set of wheel assemblies, a body mounted on said wheel assemblies, a steering system mounted on said body and operatively connected to at least one of said wheel assemblies and a driveline operatively connected to at least one of said wheel assemblies, comprising:

a support structure removably mountable on said body;

a power plant mounted on said support structure; and

disconnectable means for coupling said power plant to said driveline when said module is mounted on said body.

29. A module according to claim 28 wherein said power plant includes an engine and a transmission, and said coupling means includes means for coupling an output shaft of said transmission to an input shaft of said driveline.

30. A module according to claim 29 wherein said transmission is disposed beneath said engine, and including means for transferring drive from said engine to said transmission.

31. A vehicle according to claim 30 wherein said support structure includes a frame having crosspiece members and said engine is supported on engine mounts disposed on said crosspiece members.

32. A module according to claim 29 wherein said engine is a diesel engine and said transmission is automatic.

33. A module according to claim 28 including means disposed on said support structure cooperable with means disposed on said body for guiding said module into a selected position on said body.

34. A module according to claim 28 including means disposed on said support structure cooperable with means disposed on said body for detachably securing said module to said body.

35. A module according to claim 28 including a radiator.

36. A module according to claim 28 including an exhaust grille mounted on said support structure.

37. A module according to claim 28 including a fan mounted on said support structure.

38. A module according to claim 28 including a radiator and exhaust grille mounted on said support structure and a fan mounted on said support structure between said radiator and said exhaust grille.

39. A module according to claim 28 wherein said support structure comprises a frame including a set of leg members opened at the lower ends thereof.

40. An assembly for coupling a pair of coaxially aligned drive and driven shafts, comprising:

a first member having means for drivingly connecting to one of said shafts, a mating surface and at least one recess provided in said mating surface;

a second member having means for drivingly connecting to the other of said shafts, a mating surface engageable with the mating surface of said first member and a protrubance on said mating surface thereof receivable in said recess of said first member when said mating surfaces engage, for transferring torque between said members; and

means for detachably securing said members together with their mating surfaces engaging.

41. An assembly according to claim 40 wherein each of said connecting means comprises a yoke portion of a universal connection with an adjacent one of said shafts.

42. An assembly according to claim 40 wherein said first member includes a pair of recesses diametrically spaced relative to an axis coaxial with the axis of said shafts when said members are coupling said shafts, and said second member includes a pair of protruberances receivable in said recesses of said first member when said mating surfaces engage, for transferring torque between said members.

43. An assembly according to claim 40 wherein said detachably securing means comprises at least one toggle bolt pivotably connected to one of said members and having a nut threaded on a free end thereof, and a plate having a notch in an end thereof mounted on the other of said members in which notch a portion of said bolt may be received and against which plate said nut may be drawn to secure said members together.

44. A mechanism for releasably retaining a first structure having a bearing surface in engagement with a second structure, comprising:

a four bar linkage having a stationary bar secured to said second structure and an angularly, displaceable bar engageable with said bearing surface of said first structure when a bar of said linkage is angularly displaced relative to an adjoining bar; and

means for angularly displacing one of the angularly displaceable bars of said linkage.

45. A mechanism according to claim 44 wherein said displacing means comprises a fluid actuated cylinder assembly having a rod member operatively connected to said one angularly displaceable bars.

46. A mechanism according to claim 45 wherein said cylinder includes a spring biasing said rod member in a first direction for urging said linkage in a first condition and means for supplying a fluid under pressure for driving said rod member in a direction opposite of said first direction for displacing said linkage into a second condition.

47. A mechanism according to claim 44 wherein one of said angularly displaceable bars includes a portion projecting beyond a pivotal connection of said one bar with an adjoining bar, another of said angularly displaceable bars includes a portion projecting beyond a pivotal connection of said another bar with an adjoining bar, engageable with said bearing surface upon angular displacement of said another bar, and said displacing means comprises a fluid actuated cylinder assembly having a rod member pivotally connected to said projected portion of said one angularly displaceable bar.

48. A mechanism according to claim 47 wherein said cylinder assembly includes a spring biasing said rod member into a retracted position and thus causing said another angularly displaceable bar to angularly displace and the extended portion thereof to engage said bearing surface of said first structure in clamping relation therewith, and means for selectively supplying fluid under pressure to said cylinder assembly for driving said rod to an extended position and thus causing said another angularly displaceable bar to angularly displace and the extended portion thereof to disengage said bearing surface of said first structure, out of clamping relative therewith.

49. A mechanism according to claim 48 wherein said projecting portion of said another angularly displaceable bar includes a threaded member having a free end engageable with said bearing surface of said first structure.

50. A vehicle according to claim 1 wherein said power plant comprises a hybrid drive including an engine and an electric motor.

51. A module according to claim 28 wherein said power plant comprises a hybrid drive including an engine and an electric motor.

52. A module according to claim 28 wherein said support structure may be supported on a surface outside the vehicle permitting said power plant to be accessed for repair, maintenance or replacement purposes.

53. A module according to claim 1 wherein said power plant comprises a hybrid drive including an engine mounted on said support structure and an electric motor mounted on the underside of said engine.

54. A module according to claim 53 wherein said engine is a diesel engine.

55. A module according to claim 53 wherein said engine is an internal combustion engine.

56. A module according to claim 53 wherein said electric motor comprises an electric motor-generator set.